

KNOW THYSELF: MISPERCEPTIONS OF ACTUAL PERFORMANCE UNDERMINE
SUBJECTIVE WELL-BEING, FUTURE PERFORMANCE, AND ACHIEVEMENT
MOTIVATION

BY

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ABSTRACT

Contrary to the popular assumption that self-enhancement improves task motivation and future performance, I propose that *both* inflated or deflated self-assessments of performance are linked to an increased likelihood of practicing self-handicapping and having relatively poor performance in future tasks. Consistent with this proposal, I found that irrespective of the level of actual performance, compared to accurate self-assessment, both inflated and deflated self-assessments of task performance are associated with a greater tendency to (a) practice self-handicapping (Study 1: prefer to work under distraction; Study 2: withhold preparatory effort), (b) perform relatively poorly in a subsequent task (Study 3), (c) have relatively low academic achievement (Study 4), and (c) report relatively low level of subjective well-being (Study 5). I discuss these results in terms of their educational implications.

To Eunsil, Rachel, and Paul

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CHAPTER 1

INTRODUCTION

The forecourt of the Temple of Apollo at Delphi is inscribed with the ancient Greek aphorism “Know thyself.” This inscription invites the visitors to the Temple to acknowledge their strengths and weaknesses. The founding fathers of psychology, including William James and Sigmund Freud, exalted the virtue of self-knowledge, holding self-understanding to be a hallmark of psychological health.

Nevertheless, many self-evaluation investigators tend to emphasize the benefits of self-enhancement and diminish the value of self-criticism. For instance, some theorists argue that having positive illusions of the self may confer some psychological benefits (e.g., Brown & Dutton, 1995; Taylor & Brown, 1988; Taylor, Lerner, Sherman, Sage, & McDowell, 2003a; 2003b). In addition, folk theories, especially those that emphasize the benefits of promoting self-enhancement (e.g., reinforcing positive self-perceptions, providing unrealistically positive performance feedback) are featured in numerous popular books, the media, and daily communications (Miller, Wang, Sandel, & Cho, 2002), and are widely held among lay people and professionals (Seligman, Reivich, Jaycox, & Gillham, 1995).

Despite the popular support for the beneficial effects of self-enhancement over accurate self-assessment, the evidence for these popular beliefs is mixed. The benefits of self-enhancement have been extensively researched since Taylor and Brown (1988) published a provocative article arguing for benefits of positive illusions of the self. Researchers arguing for the psychological advantages of self-enhancement have made their case by linking positive illusions to better mental health (e.g., lower depression, higher happiness, and better psychological adjustment; Taylor & Brown, 1988; Taylor et al., 2003a), better intellectual

functioning (e.g., higher motivation, persistence, and performance; Felson, 1984; Isen & Daubman, 1984; Isen & Means, 1983), and better interpersonal relationship (Bohrnstedt & Felson, 1983).

However, harmful consequences of positive illusions of the self have also been reported (Colvin & Griffo, 2008; Colvin, Block, & Funder, 1995; Colvin & Block, 1994a; Colvin & Block, 1994b; Greham, Lane, ManMillan, Bocian, & Ward, 2000; Robins & Beer, 2001; Klein & Cooper, 2008; Klein & Cerully, 2007; Kurt & Paulhus, 2008; Kwan, John, Robins, & Kuang, 2008; McNulty, O'Mara, & Karney, 2008; McNulty & Karney, 2004). For example, Colvin et al. (1995) found that overly positive self-evaluations are related to more maladjustment and relational problems. Also, Greham et al. (2000) reported that illusory positive self-perceptions are associated with poorer social skill, more problem behaviors, and lower academic competence. Similarly, Kwan et al. (2008) found that the self-enhancement bias is associated with low levels of resilience, high levels of defensiveness, poorer social skills, high levels of narcissism, and lower grade point average (GPA). In short, whether self-enhancement is beneficial or detrimental is still an open research question.

Given the inconsistent research findings on the benefits (or costs) of self-enhancement, recent studies have examined in what conditions self-enhancement is associated with better (or worse) outcomes (e.g., Paulhus, 1998; Kwan et al., 2008; Kwan et al., 2004). For example, Paulhus (2008) found that the tendency to self-enhance is a mixed blessing: It is associated with adaptive intrapersonal outcomes (e.g., self-esteem, ego-resilience) and maladaptive interpersonal behaviors (e.g., hostility, defensive, arrogance). However, no known studies have explicitly examined whether self-enhancement compared to accurate self-assessments produces more beneficial (or detrimental) effects, although as I will explain in the Introduction to Study 4, such

comparison can help clarify important issues in the measurement of self-enhancement and therefore further illuminate the psychological consequences of self-enhancement. Accordingly, in the present research, I critically evaluate the benefits of self-enhancement relative to accurate self-assessment. I contend that both favorable and unfavorable misperceptions of one's task performance in relatively familiar performance task can have important psychological costs. This contention is based on the following premises:

- I. Individuals with repeated prior experiences of taking performance tasks in a certain domain (e.g., math) should have some, *albeit imperfect*, knowledge of their actual performance after taking a test in the same domain (hereafter referred to as the *focal test*). That is, individuals may expect their performance on the focal test to fall within a certain range (hereafter referred to as the *expected performance range*). For example, Pat may be led by past experiences to expect an average performance at level Y. However, Pat would also expect the actual performance on the focal test to fluctuate around level Y and falls within $Y \pm k$, where $Y + k$ represents the upper limit and $Y - k$ represents the lower limit of the expected performance range, respectively.
- II. When asked to estimate their performance on the focal test, some individuals (*self-enhancers*) are inclined to give estimates that are closer to the upper limit of the expected performance range and hence tend to overestimate their performance relative to actual performance. In contrast, others (*self-effacers*) are inclined to give estimates that are closer to the lower limit of the range and hence tend to underestimate their performance relative to actual performance. Whereas the self-enhancement bias reflects the motivational predilection to accept overly

positive perceptions of one's performance, the self-effacement bias reflects the motivational predilection to accept overly negative perceptions of one's performance. The self-enhancement and self-effacement biases are particularly pronounced when individuals are asked to estimate how they perform compared to their peers (as shown in the better than average effect and the below average effect, Alicke & Govorun, 2005; Kruger, 1999), because the range of expected performance for relative performance judgments is broad due to their relatively low inferential certainty (Giladi & Klar, 2002).

- III. Because individuals have some but imperfect knowledge of their actual performance on the focal task, performance feedback can temporarily bias the individuals' perceptions of their performance. Positive performance feedback can lead individuals to position perceptions of their performance toward the upper limit of the expected performance range, and hence temporarily create a self-enhancement bias for low performers. Similarly, negative performance feedback can lead individuals to position perceptions of their performance toward the lower limit of the expected performance range, and hence temporarily create a self-effacement bias for high performers.
- IV. Drawing on the evidence from the self-esteem enhancement and protection literature (e.g., Green, Sedikides, & Gregg, 2008; see below for elaboration), I argue that both chronic or temporarily induced self-enhancement and self-effacement would increase an aversion to verify one's "self-misperceptions" in subsequent tasks – Self-enhancers do not want future performance information to disconfirm a rosy view of the self, whereas self-effacers do not want future

performance information to further confirm their already unfavorable view of the self. Therefore, they are likely to use behavioral self-handicapping strategies (e.g., effort withdrawal, choosing to perform subsequent tasks under distraction) that would render performance outcomes less diagnostic of actual ability. Such self-handicapping strategies could hurt performance in subsequent tasks as well as long-term academic performance (e.g., GPA) and lower individuals' subjective well-being (Snyder & Smith, 1982). In contrast, individuals with accurate self-assessments are not threatened by diagnostic performance information (Dweck, 2006). Instead, they can use veridical information of their current performance to plan for remedial actions (Forsterling & Morgenstern, 2002; Hong, Chiu, Dweck, Lin, & Wan, 1999). Thus, accurate self-assessment is associated with a reduced tendency to engage in self-handicapping strategies, relatively better short-term and long-term performance, and higher subjective well-being.

To flesh out this idea, in the next sections, I will review the pertinent literature on self-knowledge of performance and the cognitive and motivational sources of self-misperceptions of performance. Next, I will elaborate on the possible psychological costs of self-enhancement and self-effacement. Finally, I will present three experiments that tested the hypothesis that compared to accurate self-assessment, both temporarily induced self-enhancement and self-effacement would lead to a greater tendency to engage in self-handicapping strategies (e.g., preparatory effort withdrawal in Study 1 and preference to perform subsequent tasks under distraction in Study 2), and lower performance in a subsequent task (Study 3). In Studies 4 and 5, to make contact with previous results from correlational studies that evaluated the achievement and well-

being benefits of self-enhancements, I measured individual differences in self-assessment and directional self-misperceptions and assessed the correlation of these measures with long-term academic performance (GPA, Study 4) and subjective well-being (Study 5).

Self-Knowledge of Task Performance

Self-assessment research has shown that most people have some knowledge of their actual performance, although the accuracy of such knowledge tends to vary across performance tasks. For example, in Kruger and Dunning's (1999) studies, participants took a humor (or logical reasoning) test and were asked to judge (a) how funny or logical they were relative to other students, and (b) how many questions they thought that they had answered correctly. The correlation between actual performance and self-reported performance ranged from .05 to .50, depending on the nature of the tests.

Nonetheless, many people tend to report biased assessments of their abilities and attributes (e.g., Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Kruger & Dunning, 1999; Taylor & Brown, 1988). Moreover, there are considerable individual differences in the extent of accuracy in reported self-assessments. Some individuals tend to self-enhance, whereas others tend to self-efface (John & Robin, 1994; Kruger & Dunning, 1999). For example, in one study, John and Robins (1994) had participants engage in a managerial group discussion task and rank their own performance on the task. Each participant's performance was also ranked by other group members and by 11 assessment staff members. Although self-perceptions were correlated with staff assessment, indicating some degree of sensitivity to one's actual performance, on average, the participants evaluated their performance slightly more positively than did their peers or the staff. More importantly, there were substantial individual differences in self-evaluation accuracy, ranging from sizable self-enhancement to considerable self-criticism. In short,

although self-assessments are moderately correlated with actual performance, some individuals exaggerate their performance considerably while others understate it sizably.

Several explanations have been put forward to account for individual variations in the accuracy of self-assessments. One explanation is that such variations result from people's cognitive biases (Giladi & Klar, 2002; Klar & Giladi, 1997; 1999) or lack of the metacognitive ability to tell how good/bad they are (Kruger & Dunning, 1999). Another explanation is that inaccuracy in self-assessments arises from the motivation to self-enhance (Sedikides, Gaertner, & Toguchi, 2003; Sedikides & Strube, 1997; Taylor & Brown, 1988). This motivational account posits that people are motivated to evaluate themselves favorably independent of their actual performance.

There is evidence for both accounts. For example, consistent with the cognitive explanation, inaccuracy in self-assessments diminishes after people have been trained to appraise their performance accurately (Kruger and Dunning, 1999). However, in line with the motivational account, there is also evidence that although high (vs. low) self-esteem individuals assess their performance more favorably irrespective of their actual performance, this bias is attenuated in the presence of a monetary incentive for accurate self-assessment (Kim & Chiu, 2001a).

Apparently, both cognitive and motivational factors contribute to accuracy and biases in people's appraisal of their task performance, and the relative contribution of cognitive and motivational factors may depend on people's prior experiences with the performance task. When estimating their performance on a novel task (e.g., an unfamiliar logical reasoning test or humor test), most college students do not know their ability in the task domain. Accordingly, metacognitive awareness of one's ability has relatively strong impact on performance estimates

(Kruger & Dunning, 1999). In contrast, for a familiar intellectual ability task (e.g., a math or verbal ability test), most students have acquired from their prior experiences with this task some knowledge of their actual performance on the task. Over- or under-statements of one's performance in this task may reflect the motivation to self-enhance (self-efface).

In the present research, I am interested in the psychological and performance implications of motivated favorable and unfavorable misperceptions of one's task performance. Accordingly, I selected ability tests (e.g., math tests) that are familiar to most college students, assuming that these students would have some but imperfect knowledge of their actual performance on these tests, and their biases in self-reported performance on these tests are likely to reflect the motivation to self-enhance or self-efface.

To verify my assumption that college students possess some knowledge of their performance on my tests, I conducted a pilot test with 61 students from an introductory psychology class in a public university in the United States. The participants completed 10 randomly selected math questions from the SATs (Scholastic Aptitude Tests) in 10 minutes and estimated how many questions they thought they had answered correctly. To evoke an accuracy motivation, the experimenter emphasized that the research concerns how accurately people could estimate their performance. The mean self-reported performance on the test was 4.48 items ($SD = 1.76$), which was slightly higher than the mean actual performance ($M = 4.18$ items, $SD = 1.85$), $t(61) = 2.17$, $p < .05$, indicating a small tendency toward overstating one's performance. Of the 61 participants, 39% ($N = 24$) correctly estimated the number of correct answers they made. Another 27 participants (44%) over- or underestimated their performance by one item only. The correlation between actual performance and self-reported performance was .81. These

results indicated that the participants could be fairly accurate *when they were explicitly asked to form accurate self-assessment*.

Downstream Consequences of Misperceptions of Performance

Given that people have some knowledge of their actual performance in a familiar test, I am interested in the downstream consequences of misperceptions of one's performance.

Conceptually, I can classify people into four conceptual categories based on their actual task performance and their performance perceptions. The first category consists of low performers who misperceive their actual performance on the focal task to be high (self-enhancers). The second category consists of low performers who have accurate knowledge of their performance on the focal task (accurate low performers). The third category consists of high performers who perceive their actual performance on the focal task to be low (self-effacers). The last category consists of high performers who have accurate knowledge of their performance on the focal task (accurate high performers).

I posit that compared to accurate performers, self-enhancers are more motivated to practice self-handicapping. When individuals view (are led by task feedback to view) their performance on the focal task as higher than the anticipated performance based on their self-knowledge, they are motivated to maintain the positive self-view by avoiding future performance information that would disconfirm this self-view. Thus, they would engage in self-handicapping, defined as a process wherein a person, in anticipation of potential self-esteem loss due to inadequate performance that may implicate one's ability, adopts behaviors that could discount the ability implications of poor performance (Snyder & Smith, 1982). For example, they may withhold preparatory effort in an upcoming task or choose to perform the task under distraction so that they can attribute poor task performance to lack of preparation or the distraction instead

of attributing it to their ability. These strategies are self-handicapping because they lower future performance.

These strategies will also put their users under chronic evaluation apprehension and lower their subjective well-being. Overly positive self-assessments are difficult to maintain; those with overly positive self-assessments would experience emotional distress when they encounter circumstances that challenge their positive self-perceptions. For example, as Baumeister (1989) argues, “A substantially inflated view of self is difficult to sustain on a day-to-day basis, for even mediocre performance threatens the public and private image of self that one has cultivated” (p. 184). Excessively favorable self-assessments can intensify concerns with self-evaluations (Dweck, 2002; 2006; Kamins & Dweck, 1999; Mueller & Dweck, 1998), leading to engagement in self-defeating practices (e.g., self-handicapping behaviors) for the sake of protecting a threatened self-image. Consistent with this idea, individuals with inflated self-ratings (compared to ratings provided by their close acquaintances, friends, observers) are perceived to be poorly adjusted, bragging, hostile and self-defeating (Colvin et al., 1995; Paulhus, 1988). Accordingly, like self-effacers who have chronic negative self-regards, self-enhancers may also experience low levels of subjective well-being. As shown in a recent study (Kim & Chiu, 2010b), like students who underestimate their actual performance, students who overestimate their performance also report higher levels of depression compared to those who accurately assess their performance. Thus, I predicted that individuals with unrealistic (vs. realistic) positive self-assessments would experience lower levels of subjective-well being.

In contrast, I posit that compared to accurate performers, self-effacers are motivated to practice self-handicapping. Past research shows that self-effacers tend to have a heightened concern for performance, and often experience intense worry, self-doubt and anxiety when they

are assigned to a challenging achievement task (Ferrari & Thompson, 2006; Pualengco, Kim & Chiu, 2009b; Warner & Moore, 2004). Due to their intense self-doubt, they tend to underestimate their actual performance. However, because of their heightened concern for performance, they are often apprehensive of receiving future performance information that would further confirm their perception of low ability. Like self-enhancers, these individuals are also likely to practice self-handicapping that would lower short-term and long-term performance and subjective well-being.

Self-effacement in the context of the present research is different from defensive pessimism (Norem & Cantor, 1986). Defensive pessimists *anxiously anticipate* poor performance in a task; nonetheless, they work hard on the task to maximize their chance of success. Thus, defensive pessimists tend to increase their effort investment and show improvement in the subsequent task. However, driven by self-doubt and performance concerns, self-effacers in the present research context have serious *self-doubt over their performance in the previous task* and seek to minimize the potentially damaging effects of possible failures on self-evaluation by practicing self-handicapping; they tend to withdraw effort and consequently have poor performance in the upcoming task. This distinction is consistent with the distinction Norem (2008) made between active self-criticism (defensive pessimism) that is in the service of possible self-enhancement goals, and passive or static negative self-evaluations that characterize chronic self-effacers.

In contrast, accurate self-assessors, irrespective of their level of actual performance, are less threatened by performance feedback in the upcoming tasks and hence less likely to use self-handicapping strategies. Instead, they tend to use knowledge of their current performance to plan remedial actions, which could lead to improved performance in future achievement tests.

Consistent with this, past studies have revealed a positive association between accurate self-assessment of performance and the belief in malleable intelligence (Dweck, 2006), which in turn predicts the motivation to engage in remedial actions (Hong et al., 1999). Furthermore, accurate assessment of performance also motivates individuals to engage in preparatory effort and hence improves performance in subsequent tasks (Forsterling & Morgenstern, 2002).

The above analysis is also consistent with growing research evidence on the psychological costs and benefits of positive self-perceptions. Although positive self-perceptions have been shown to be associated with a broad range of psychological benefits (Brown & Dutton, 1995; Taylor & Brown, 1988), these perceptions may have negative psychological consequences when they become overly discrepant with the individuals' actual qualities (Colvin & Griffo, 2008; Colvin, Block, & Funder, 1995; Colvin & Block, 1994a; Colvin & Block, 1994b; Robins & Beer, 2001; Klein & Cooper, 2008; Klein & Cerully, 2007; Kurt & Paulhus, 2008; Kwan, John, Robins, & Kuang, 2008; McNulty, O'Mara, & Karney, 2008; McNulty & Karney, 2004). For example, unrealistic positive self-assessments measured by the difference between self-assessments and peer (or expert) ratings are related to more maladjustment, more relational problems, poorer social skills, more problem behaviors (Colvin et al., 1995; Grehm, et al., 2002; Kwan et al., 2008), lower academic competence, and lower subjective well-being (Robins & Beers, 2001; Kwan et al., 2008). Similarly, unrealistic positive self-assessment of future health outcomes predicts higher health risk, and more risky behavioral intentions and behaviors (Klein & Cooper, 2008). In short, although positive self-perceptions are associated with positive social and performance outcomes, the psychological benefits of such perceptions disappear and even turn into liabilities when these perceptions are grossly inflated (Papps & O'Carroll, 1998).

I will report three experiments and two individual difference studies that tested these ideas. I hypothesize that compared to accurate self-assessments, chronic or temporarily induced self-enhancement or self-effacement would promote a tendency to practice self-handicapping (Studies 1 and 2), lower task performance (Study 3) and have lower levels of subjective well-being (Study 5). Finally, individuals who make self-enhancing or self-effacing performance assessments spontaneously may have a chronic tendency to make such assessments. Because academic performance is negatively related to self-handicapping and effort withdrawal (Snyder & Smith, 1982), if individuals who make unrealistic self-assessments spontaneously are likely to engage in self-handicapping and effort withdrawal, these individuals may also have relatively low academic performance. I tested this hypothesis in Study 4. If the results support my hypothesis, it would suggest that helping students to acknowledge their strengths and come to terms with their weaknesses could increase students' learning motivation, performance and subjective well-being.

CHAPTER 2

STUDY 1: PREFERENCE TO WORK UNDER DISTRACTION

I hypothesize that when low performers receive performance feedback that exceeds their expectation, they would be motivated to maintain positive perceptions of their performance by avoiding opportunities to verify their actual performance. For example, if they need to take the same task, they would choose to take it in a non-diagnostic condition (e.g., taking the test in a noisy environment so that they can attribute their poor performance in the subsequent test to environmental distraction). Likewise, when high performers receive performance feedback that falls below their expectation, the feedback may cast doubt on their chronic positive self-views. Consequently, out of self-protection concerns, these individuals may avoid situations that would confirm the validity of the feedback. Thus, if required to take the same test again, they would also choose to take it in a non-diagnostic test condition. In contrast, individuals who receive accurate feedback, independent of their level of performance, would not be as motivated to practice self-handicapping. The present study was designed to test these hypothesized effects of temporarily induced self-enhancement and self-effacement on the motivation to verify one's actual performance.

Method

The participants were 283 European American undergraduates (180 females) from an introductory psychology class in a public university in the United States. Their age ranged from 18 to 21 ($M = 18.65$ years, $SD = 1.30$).

In each experimental session, 4 to 6 participants, seated in separate cubicles, were given 10 minutes to complete 25 randomly selected math problems from the SATs. At the completion of the first task, the experimenter collected the tests from the participants and pretended to grade

them in another cubicle. At this point, the participants were randomly assigned to receive bogus high performance feedback or bogus low performance feedback. In addition, I ran a control condition (no feedback) later to identify whether the effect was due to misperceptions of performance or accuracy in performance perception. In the high and low performance feedback conditions, the experimenter returned a few minutes later to the participants' cubicles to inform the participants of their performance relative to the normative performance in their university. The participants were told that the norm was based on 800 university students' performance on the same test. The experimenter showed the participants a histogram depicting the normally distributed performance of the 800 university students on the test. There were 10 classes in the histogram, which were marked Level 1 (the worst performance) to Level 10 (the best performance). In the high performance feedback condition, the participants were told that their performance was at Level 9. In the low performance feedback condition, the participants were told that their performance was at Level 2. Participants in the no feedback control condition did not receive any feedback.

Given that the task was a familiar intellectual task, the participants should have some knowledge of their actual ability in the task domain. Note however that although the participants might know from taking the test the number of items they had answered correctly, they might not have very good knowledge of how their performance compared to their peers' performance. The normative nature of the feedback increased the likelihood that the participants would accept the feedback as valid. Thus, low performers receiving high performance feedback would temporarily go through a self-enhancing experience; they thought they performed better than expected and would be motivated to preserve this positive self-view. In contrast, high performers receiving low performance feedback would temporarily go through a self-effacing experience; they felt

that their performance was worse than expected and would be concerned that their “low performance” was indicative of their actual ability.

After the feedback manipulation, the participants learned that they would participate in an “unrelated” experiment regarding the effect of noise on test performance. They were required to take a similar math test in the presence of different amounts of noise. The experimenter then explained to the participants how noise could impact performance according to past research findings. From the experimenter, the participants learned that independent of the test takers’ actual ability, the presence of heavy noise could hurt performance on math tests severely. Next, the participants learned that there were 7 noise levels (1 = no noise at all; 7 = heaviest noise) and were asked to choose the level of noise that would be present while they were working on the next math test.

After the participants had indicated their choice, they were asked to fill out a survey while the experimenter prepared for the test. I included an item in the survey to check the effectiveness of the feedback manipulation. Specifically, the participants were asked to rate their performance on the previous task on a 7-point Likert scale (1 = really bad, 7 = very good).

To rule out the possibility that the predicted result reflected a greater challenge-seeking tendency when individuals received feedback that was higher or lower than their expected performance, I also measured the participants’ challenge-seeking tendency. Specifically, I asked the participants to indicate how likely they would take a very challenging task that only a few people would succeed (1 = least likely, 7 = very likely).

Finally, to further rule out the possibility that my results are due to expectancy disconfirmation (high performers receiving low performance feedback and low performers receiving high feedback), I also measured how intense the participants experienced (a)

disappointment and (b) happiness. The participants indicated their responses to each item on a scale that ranged from 1 (not at all) to 7 (with maximum intensity).

Results and Discussion

Men had higher performance on the math test ($M = 7.12$, $SD = 3.34$) than did women ($M = 5.54$, $SD = 2.70$), $F(1, 281) = 19.04$, $p < .001$, $\eta^2_p = .06$. The mean number of correct answers for all participants was 6.12 ($SD = 3.04$). In addition, male participants chose higher noise levels ($M = 3.89$, $SD = 2.02$) than did female participants ($M = 2.91$, $SD = 1.70$), $F(1, 281) = 18.86$, $p < .001$, $\eta^2_p = .06$. The mean noise level for all participants was 3.27 ($SD = 1.88$).

The performance feedback manipulation was successful. I regressed perceived performance on mean-centered test performance, feedback and their interaction. As expected, compared to participants in the control condition ($M = 2.39$, $SD = 1.95$), participants receiving low performance feedback condition perceived their performance less favorably ($M = 1.66$, $SD = 0.82$), $t(277) = -3.68$, $p < .001$; whereas those receiving high performance feedback condition ($M = 5.08$, $SD = 1.98$) perceived their performance more favorably, $t(277) = 14.78$, $p < .001$. More importantly, the interaction of performance feedback and test performance on perceived performance was not significant, $F(2, 277) = 1.54$, *ns*, indicating that the performance feedback manipulation had comparable effects on both high and low performers.

To test my hypothesis, following Aiken and West (1991), we regressed noise level on test performance (treated as a mean-centered continuous predictor), feedback condition (high, low, or control), gender, and their interactions. In this (and the subsequent) regression analysis that used feedback as a predictor, I coded feedback into two dummy variables, with the control condition as the reference category. No gender differences were found and I did not consider gender further. The predicted interaction of test performance and feedback was significant, $F(2,$

277) = 4.70, $p < .05$, $\eta^2_p = .02$. To understand the nature of the interaction, I examined how feedback affected the level of noise chosen at different levels of test performance. As shown in Figure 1, simple slope analysis (Aiken & West, 1991) results showed that when test performance was high (one standard deviation above its mean), participants receiving low performance feedback chose higher levels of noise ($Y_e = 4.30$) than did those in the control condition ($Y_e = 3.32$),¹ $F(1, 277) = 4.84$, $p < .05$, and the high performance feedback condition ($Y_e = 3.30$), $F(1, 277) = 3.47$, $p < .05$. The level of noise chosen in the high performance feedback and control conditions did not differ, $F(1, 277) = 0.002$, *ns*. In contrast, when test performance was low (one standard deviation below its mean), participants receiving high performance feedback chose higher levels of noise ($Y_e = 3.58$) than did those receiving low performance feedback ($Y_e = 2.73$), $F(1, 277) = 4.27$, $p < .05$, and those in the control condition ($Y_e = 2.85$), $F(1, 277) = 3.75$, $p < .05$. The level of noise chosen in the low performance feedback and control conditions did not differ, $F(1, 277) = 0.10$, *ns*.

Next, I examined the relationship between test performance and noise level in each feedback condition. In the control condition, test performance was not related to the level of noise chosen, $B = 0.07$, $t(131) = 1.41$, $p > .10$. As expected, in the low performance feedback condition, participants with higher performance chose higher levels of noise, $B = 0.23$, $t(71) = 3.24$, $p < .001$. Also as expected, in the high performance feedback condition, test performance

¹ The estimated value (Y_e) in simple slope analysis is the predicted value of the criterion variable estimated from the regression model when the predictor variable was at one standard deviation below or above the mean. For the sake of brevity, I have omitted the phrase “were predicted to” when I described the simple slope analysis results. For example, the sentence “participants receiving low performance feedback chose higher levels of noise” should be interpreted as “participants receiving low performance feedback *were predicted to* choose higher levels of noise”.

was negatively associated with the level of nose chosen, $B = -0.04$, $t(75) = -0.51$, $p > .10$, although the association was not significant.²

Furthermore, I did not find any significant effects when I regressed participants' challenge-seeking tendency on test performance, feedback, and their interaction, $F_s < 1.75$. Thus, the Test Performance X Feedback interaction on noise level was not attributable to differential challenge-seeking tendencies in the different experimental conditions.

I also regressed each of the two emotions on test performance, feedback and their interaction. The Test Performance X Feedback interaction was not significant on both emotion measures, $F(2, 277) \leq 1.76$, *ns*, suggesting that my results were not driven by expectation disconfirmation. The main effect of feedback on disappointment was significant, $F(2, 277) = 9.84$, $p < .01$. Compared to control participants ($M = 2.57$), participants who received low performance feedback were more disappointed ($M = 3.22$), $t(277) = 2.85$, $p < .01$; and participants who received high performance feedback were also less disappointed ($M = 2.10$), $t(277) = -2.18$, $p < .05$. Note, however, that in all conditions, the mean level of disappointment was moderately low. The main effect of feedback on happiness was also significant, $F(2, 277) = 6.85$, $p < .01$. Compared to control participants ($M = 4.00$), participants receiving positive feedback ($M = 4.35$) were happier, $t(277) = 2.45$, $p < .05$; and participants receiving negative feedback were less happy ($M = 3.71$), although the latter difference was not significant, $t(277) = 1.78$, $p = .08$. The significant main effects of feedback on emotions indicated that the participants felt the emotional impact of the feedback. However, low performers who received high

² In this study and in Study 3, I had more participants in the control condition than in the other two conditions. I randomly assigned participants to the high or low feedback condition, and added the control condition later to identify whether the effect was due to misperceptions of performance or accuracy in performance perception. With the greater N in the control condition, it should be easier to obtain in this condition a significant correlation between performance and the dependent measure. Nonetheless, this association was not significant in both studies.

performance feedback were *not* happier than high performers who received the same feedback, and high performers who received low performance feedback were *not* more disappointed than low performers who received the same feedback.

In summary, among both high and low performers, receiving inaccurate feedback increased the chance of practicing self-handicapping. Low performers who received high performance feedback (vs. low performance or no feedback) and high performers who received low performance feedback (vs. high performance or no feedback) were more likely to choose to take the same test in a non-diagnostic (noisy) environment.

CHAPTER 3

STUDY 2: PREPARATORY EFFORT WITHDRAWAL

Study 1 provided the first evidence that inaccurate feedback increases the likelihood of practicing self-handicapping. The present study seeks to extend this result to preparatory effort withdrawal, another major self-handicapping behavior. I hypothesize that low performers receiving high performance feedback and high performers receiving low performance feedback would be more likely than those who receive accurate feedback to withhold preparatory effort for an upcoming ability test as an attempt to obscure the link between test performance and actual ability.

Method

The participants were 136 European American undergraduates (77 females) from an introductory psychology class in a public university in the United States. Their age ranged from 18 to 23 ($M = 19.18$ years, $SD = 1.03$). The procedures were identical to those in Study 1 with the exception that I did not include a control condition in the current study. After receiving low or high bogus performance feedback, the participants learned that they would take another task that assessed their intellectual ability. They were told that before taking the ability test, they would be given a chance to work on a tutorial exercise that would enhance their performance in the ability test.

Next, the participants were given 8 minutes to work on the tutorial exercise. They were told that taking the tutorial exercise was optional. If they did not want to work on the exercise, they could wait for 8 minutes until other participants had completed the exercise. After they had started the exercise, they could stop any time if they wanted to. The participants were assured that the tutorial exercise would not be graded and that they should not leave any identifying

information on the exercise. The exercise consisted of 39 anagrams, each with 2 or 3 correct solutions. No participants completed all the anagrams within the allotted time. I considered the number of questions attempted as a measure of the participants' preparatory effort. In addition, I measured how many anagrams participants had solved within the allotted time. Upon completing the task, the participants completed the same manipulation check item as in Study 1.

Results and Discussion

As in Study 1, men had higher performance on the math test ($M = 8.78$, $SD = 3.60$) than did women ($M = 5.56$, $SD = 2.58$), $F(1, 134) = 37.00$, $p < .001$, $\eta^2_p = .22$. The mean number of correct answers for all participants was 6.96 ($SD = 3.44$). No gender differences were found on the performance of the anagram test, $F(1, 134) = 0.05$, ns . The mean number of correct solutions for all participants was 24.73 ($SD = 8.31$).

The performance feedback manipulation was successful. Participants in the low performance feedback condition perceived their performance less favorably ($M = 1.92$, $SD = 0.78$) than did those in the high performance condition ($M = 5.22$, $SD = 1.61$, $F(1, 132) = 218.39$, $p < .001$). Again, the interaction of performance feedback and test performance on perceived performance was not significant, $F(1, 132) = 0.92$, ns , indicating that the performance feedback manipulation had comparable effects on both high and low performers.

To test my hypothesis, I regressed the amount of preparatory effort (the number of anagrams attempted) on the math test performance (mean-centered), feedback condition (high vs. low), gender, and their interactions. Again, no gender differences were found and I did not consider gender further. Results showed that participants who received unrealistically positive or negative performance feedback attempted fewer anagrams than did those who received accurate performance feedback, $F(1, 128)$ for the Performance X Feedback interaction = 6.15, $p = .01$. As

shown in Figure 2, among high performers (participants with performance at one standard deviation above the mean), those who received high performance feedback attempted more anagrams ($Y_e = 23.45$) than did those who received low performance feedback ($Y_e = 20.08$), $F(1, 128) = 2.78$, $p < .10$, although the difference was only marginally significant. In contrast, among low performers (participants with performance at one standard deviation below the mean), those who received low performance feedback attempted more anagram questions ($Y_e = 21.96$) than did those who received high performance feedback condition ($Y_e = 18.16$), $F(1, 128) = 3.58$, $p = .06$.³

The above results are consistent with my proposal that performance feedback influenced self-perception of performance, which in turn interacted with actual performance to affect the extent of effort withholding. To test this idea, I replaced performance feedback with perceived performance (participants' responses to the manipulation check item) in the preceding analysis. The predicted interaction of perceived performance and actual performance was significant, $F(1, 128) = 8.16$, $p < .01$, $\eta^2_p = .06$. When math test performance was high (one standard deviation above its mean), there was a positive slope relating perceived performance to the amount of preparatory effort, $B = 1.06$, $t(128) = 2.37$, $p < .05$. In contrast, when math performance was low (one standard deviation below its mean), there was a non-significant negative slope relating perceived performance to the amount of preparatory effort, $B = -0.89$, $t(128) = -1.72$, $p = .08$.

³ The number of anagrams attempted was highly correlated with the number of anagram solved ($r = .62$, $p < .001$), and I obtained the same result when the number of anagrams solved was the dependent variable in the preceding analysis. The predicted interaction of the math test performance and performance feedback was significant, $F(2, 132) = 8.12$, $p < .01$, $\eta^2_p = .06$. In decomposing the interaction, I examined how performance feedback affected the number of anagrams solved as a function of math test performance. When math test performance was high (one standard deviation above its mean), participants receiving high performance feedback solved more anagrams ($Y_e = 28.00$) than did those receiving low performance feedback ($Y_e = 21.84$), $F(1, 132) = 5.29$, $p < .05$. In contrast, when math performance was low (one standard deviation below its mean), participants receiving low performance feedback solved more anagrams ($Y_e = 25.31$) than did those receiving high performance feedback ($Y_e = 23.64$), although the difference was only marginally significant, $F(1, 132) = 3.04$, $p = .08$.

Taken together, Study 2 results showed that inaccurate feedback, particularly unrealistic negative feedback, could lead to withdrawal of preparatory effort for upcoming ability test.

CHAPTER 4

STUDY 3: TASK PERFORMANCE

Studies 1 and 2 showed that receiving inaccurate feedback increases the likelihood of practicing self-handicapping, which theoretically, should lower performance in subsequent ability tests. Study 3 was designed to test this hypothesis.

Method

The participants were 223 European American undergraduates (95 females) students from an introductory psychology class in a public university in the United States. Their age ranged from 18 to 22 ($M = 18.90$ years, $SD = 0.78$). As in Study 1, participants were randomly assigned to receive either high or low bogus performance feedback after taking the SAT math test, and a control condition (no feedback) was run later to determine whether the effect was due to misperceptions of performance or accuracy in performance perception. Following the feedback manipulation, to examine the consequences of the feedback manipulation on performance in a subsequent unrelated task, I gave the participants 10 minutes to solve 15 anagrams. Each anagram had three solutions, and the participants were asked to identify all three solutions by rearranging a string of letters into three meaningful words. The dependent measure was the number of correct solutions (out of 45) the participants could find. Upon completing the task, the participants were debriefed and thanked for their participation.

Results and Discussion

Again, men had higher performance on the math test ($M = 8.08$, $SD = 3.24$) than did women ($M = 5.89$, $SD = 2.68$), $F(1, 221) = 18.82$, $p < .001$, $\eta^2_p = .18$. The mean number of correct answers for all participants was 6.64 ($SD = 3.07$). No gender differences in the anagram test

performance were found, $F_s < 1$, *ns*. The mean number of correct solutions for all participants was 20.45 ($SD = 4.68$).

I regressed performance on the anagram test on the participants' performance on the math test (mean-centered), the performance feedback they received (high, low, no performance feedback), gender, and their interactions. As in Study 1, in this (and the subsequent) regression analysis that used feedback as a predictor, I coded feedback into two dummy variables, with the control condition as the reference category. The gender effects were not significant and I did not consider gender further. The main effect of performance feedback condition was reliable, $F(2, 217) = 4.08$, $p < .05$, $\eta^2_p = .04$. Participants in the control condition performed better on the anagram task ($M = 21.60$, $SD = 4.44$) than did participants in the high feedback condition ($M = 19.31$, $SD = 5.12$), $F(1, 177) = 8.05$, $p < .01$, $\eta^2_p = .04$. However, participants who received low performance feedback ($M = 20.71$, $SD = 4.58$) did not differ from those who received high performance feedback, $F(1, 90) = 1.65$, *ns*, or no feedback, $F(1, 167) = 1.18$, *ns*. More important, the predicted interaction of performance on the math test and performance feedback on the anagram test performance was significant, $F(2, 217) = 6.88$, $p = .001$, $\eta^2_p = .06$.

I decomposed the interaction by examining how performance feedback influenced anagram performance in different levels of math performance. As shown in Figure 3, simple slope analysis results revealed that when math test performance was low (one standard deviation below its mean), participants receiving high performance feedback performed more poorly on the anagram test ($Y_e = 17.98$) than did those receiving no performance feedback ($Y_e = 20.37$), $F(1, 217) = 5.99$, $p < .05$. Low performers receiving low performance feedback performed at the same level ($Y_e = 22.51$) as low performers receiving no performance feedback ($Y_e = 20.37$), $F(1, 217) = 1.28$, $p > .10$. In contrast, when math performance was high (one standard deviation

above its mean), participants receiving low performance feedback had poorer performance ($Y_e = 18.70$) than those in the no feedback condition ($Y_e = 22.75$), $F(1, 217) = 7.76, p < .01$. High performers receiving high performance feedback performed at the same level ($Y_e = 21.11$) as high performers receiving no feedback ($Y_e = 22.75$), $F(1, 217) = 2.42, p > .10, ns$.

I also examined how anagram performance was related to math performance in each performance feedback condition. In the no performance feedback condition, math test performance was positively related to anagram test performance, $B = 0.39, t(127) = 3.12, p < .05$. That is, high (vs. low) performing students in the math test performed better in the anagram test. In the high performance feedback, math test performance was also positively related to anagram performance, $B = 0.50, t(50) = 2.54, p < .05$, indicating that when given positive performance feedback, high (vs. low) performers on the math test had better performance in the subsequent task. However, in the low performance feedback condition, math test performance was negatively related to anagram performance, $B = -0.53, t(40) = -2.23, p < .05$. That is, when given negative performance feedback, high (vs. low) performers had poorer performance in the subsequent task. In short, for both high and low performers, receiving inaccurate (unrealistic positive and unfounded negative) feedback undermined performance on the subsequent task.

CHAPTER 5

STUDY 4: LONG-TERM ACADEMIC PERFORMANCE

Studies 1 to 3 are controlled experiments designed to demonstrate the causal effects of inaccurate self-assessments on self-handicapping and task performance. These studies showed that when individuals are led by bogus performance feedback to form overly positive or negative views of their performance, they have a greater tendency to practice self-handicapping, which could eventually affect task performance.

This conclusion appears to contradict results from many individual differences studies that have found positive effects of self-enhancement. I posit that this contradiction will dissolve when I consider several measurement issues that have obscured the negative effects of self-enhancement relative to accurate self-assessment. In this and the next study, I seek to show that when self-enhancement is measured properly and compared to accurate self-assessment, self-enhancement, like self-effacement, is associated with negative outcomes such as unsatisfactory academic achievement and low subjective well-being.

Measurement Issues

Many investigators have questioned the ways self-enhancement has been measured (Colvin & Block, 1994a; Colvin & Block, 1994b; Colvin, Block, & Funder, 1995; Kwan, John, Robins, & Kuang, 2008; Kwan, John, Kenny, & Bond, 2004). Colvin and his colleagues (1994a; 1995) argued that many of the studies that have found psychological benefits of positive illusions did not distinguish people who perceive that they possess positive qualities when they do not (self-enhancers) from those who perceive that they possess positive qualities when they do (people with accurate positive self-perceptions), because these studies did not include an external comparison target. For example, scores on Rosenberg's (1965) Self-Esteem Scale, one of the

most frequently used measures to assess individuals' positive self-perceptions, were used as a measure of individuals' positive illusion about the self. However, high self-esteem does not necessarily imply positive illusion, unless it is not supported by possession of positive attributes.

Social comparison (comparing self-ratings with ratings of others) and lack of self-insight (comparing self-ratings with ratings by others) are two widely used measures of self-enhancement that include an external criterion. However, Kwan et al. (2004, 2008) observed that these measures also have limitations. Kwan and her colleagues argued that people who are considered self-enhancers in the social comparison approach (the ones who perceive themselves more positively than they perceive others) do not self-enhance if they have better performance than others in reality. That is, the social comparison measure does not take into account the individuals' actual ability (the target effect). In contrast, people who are considered to be self-enhancers in the self-insight approach (people who perceive themselves more positively than others perceive them) are not necessarily self-enhancers because people have different evaluative standards (the perceiver effect). For example, when person A adopts more liberal standards in evaluating the self and others, person A's self-ratings will be higher than others' ratings of person A, giving rise to an apparent self-enhancement by person A. Thus, the apparent lack of self-insight may be an artifact of the perceiver effect.

In light of these problems, a valid measure of self-enhancement should compare individuals' self-assessments of performance with their actual performance (Kwan et al., 2008; see also Gramzow, Willard, & Mendes, 2008; Robins & Beers, 2001). However, Kwan et al. (2008) also cautioned that although using actual performance as the comparison standard takes care of the target effect, it does not remove the perceiver effect. For example, it is possible that "individuals who believe they are more academically competent than their actual grades indicate may believe

that individuals are generally more academically competent than their grade” (p. 1075). To control the perceiver effect, Kwan et al. (2008) recommended the use of rankings to measure self-assessment because rankings require all individuals to anchor their self-ratings on the same mean.

To address the aforementioned measurement issues, in the present study and the next study, I had the participants estimate the percentile scores of their performance and compared the participants’ self-reported performance assessments to their actual performance. Specifically, I had the participants take an objective test, compare their performance with the performance of other students in their school, and record their relative performance perception on a percentile rank that ranges from 0 (*“I am at the bottom”*) to 100 (*“I am on the top”*). After the studies were over, I calculated participants’ actual performance percentile rank. Next, I measured self-enhancement by comparing participants’ perceived performance with their actual performance.

Aside from the issue of comparison standard, in many past studies, researchers have used the difference score between self-assessments and a certain objective measure of the ability (actual performance, or peer evaluations) as an index of self-enhancement. This measure pits unrealistic positive self-assessment against unrealistic negative self-assessment, and hence cannot provide an accurate evaluation of whether self-enhancement relative to accurate self-assessment will produce more beneficial effects. Specifically, a positive (or negative) correlation between this measure and a certain outcome variable does not imply that self-enhancement is associated with better (or worse) outcomes. Depending on the range of the observed difference scores, several alternative conclusions can be drawn from the results. To elaborate, suppose a positive correlation was found between the difference score and a certain outcome variable. If the observed difference scores cover positive values only, the result would indicate that

individuals with unfounded positive self-perceptions outperform those with accurate self-assessment. However, if the observed difference scores cover negative values only, the same result would indicate that accurate self-assessors outperform self-effacers. Finally, if the observed difference scores cover both positive and negative values, the result would indicate that self-enhancers outperform the accurate self-assessors, who in turn outperform the self-effacers.

Thus, to examine whether self-enhancement (or self-effacement) is more beneficial than accurate self-assessments, in the present and the next study, instead of using the difference score as the independent variable, I used participants' perceived performance, their actual performance on an objective test and the interaction of the two variables as predictors of the participants' academic performance (the present study) and subjective well being (Study 5). The interaction allows direct assessment of how positive or negative misperceptions of task performance are related to the outcome variables when actual performance is high or low. That is, I can independently assess the effects of self-enhancement (positive self-perception when actual performance is low), self-effacement (negative self-perception when actual performance is high), and accurate self-assessment (self-perceptions are consistent with actual performance).

Method

The participants were 215 European American undergraduates (139 females) from an introductory psychology class in a public university in the United States. Their age ranged from 18 to 27 ($M = 19.97$ years, $SD = 1.23$). The participants completed a set of 10 randomly selected items from the SATs (Scholastic Aptitude Tests). To extend the generalizability of the results, 3 different sets of items were used: the 10 math problems used in the pilot test, a different set of 10 math problems, or a set of 10 verbal problems. Because the results were identical across the three sets of items, I combined all data in my analysis.

After completing the task, the participants estimated how well they performed on the test compared to other undergraduates in their university. They indicated their answer on a percentile scale that ranged from 0 (*I'm at the very bottom*) to 50 (*I'm better than half and worse than half of other students*) and 100 (*I'm on the top*). In addition, they indicated how many questions they thought they had answered correctly. Finally, they were asked to report their current GPA. One possible limitation of the present study is that I used self-reported GPA as the dependent measure, which is subject to memory distortions and other biases. However, the extent of these biases has been reported to be relatively small (.10 or less in a 4-point scale) (Gramzow, Elliot, Asher, & McGregor, 20003; Gramzow, Willard, & Mendes, 2008; Gramzow & Willard, 2006).

Results and Discussion

The mean number of correct answers for all participants was 5.80 ($SD = 1.97$). Each participant was assigned a percentile rank based on their actual performance on the test relative to that of other participants who worked on the same task. A repeated measure ANOVA showed that the mean actual rank was lower ($M = 57.18$, $SD = 28.86$) than the mean self-reported rank ($M = 61.60$, $SD = 23.13$), $F(1, 214) = 6.43$, $p = .01$, suggesting that on average, the participants reported their task performance to slightly higher than their actual performance. The correlation between actual and self-reported rank was $.56$, $p < .001$. The mean GPA was 3.43 ($SD = .37$).

Male participants performed better on the tests ($M = 63.83$, $SD = 27.56$) than female participants ($M = 53.54$, $SD = 28.99$), $F(1, 213) = 6.41$, $p = .01$, $\eta^2_p = .03$. Male participants also perceived their performance more positively ($M = 67.93$, $SD = 17.97$) than did female participants ($M = 58.14$, $SD = 24.89$), $F(1, 213) = 9.02$, $p < .01$, $\eta^2_p = .04$. However, there was no gender difference in the size of discrepancy between actual and perceived performance, $F(1, 213) = .03$, *ns*.

I regressed reported GPA on (mean-centered) actual performance percentile, (mean-centered) self-reported performance percentile, gender, and their interactions. Participants' gender did not qualify my results and was not considered further. The predicted interaction of actual performance percentile and self-reported performance percentile was significant, $F(1, 207) = 15.26, p < .001, \eta^2_p = .07$, but the main effects were not. As shown in Figure 4, simple slope analysis results showed that participants who understated or overstated their relative performance had lower GPA than did those who perceived their high or low relative performance accurately. Among participants with high actual performance (one standard deviation above the mean), self-reported performance was positively related to GPA, $B = 0.005, t(207) = 2.76, p < .01$. That is, among high performers, those who understated their performance more had lower GPA. Among participants with low performance (one standard deviation below the mean), self-reported performance was negatively related to GPA, $B = -0.003, t(207) = -2.12, p < .05$; among low performers, those who overstated their performance more had lower GPA.⁴

In short, my results revealed considerable individual differences in the tendency to overstate or understate one's relative and absolute task performance. Moreover, those who misperceived their performance (both self-enhancers and self-effacers) tended to have lower GPA than those who perceived their performance accurately.

⁴ I also tested my hypothesis by replacing the self-reported percentile ranks with the participants' self-reported number of correct items as the dependent variable. The predicted interaction of actual number of correct answers and self-reported absolute number of correct answers again was significant, $F(1, 207) = 9.54, p < .01, \eta^2_p = .05$, but the main effects were not. In general, participants with inflated or deflated self-assessment of performance (vs. those who reported their high or low performance accurately) had lower GPA. Among participants with high actual performance (one standard deviation above the mean), there was a marginally significant trend for those who understated their performance more to have lower GPA, $B = 0.04, t(207) = 1.69, p = .09$. Among participants with low performance (one standard deviation below the mean), self-reported absolute performance was negatively related to GPA, $B = -0.04, t(207) = -1.90, p = .06$; among low performers, those who overstated their performance more tended to have lower GPA.

CHAPTER 6

STUDY 5: LIFE SATISFACTION

The present study was conducted to extend Study 4 results to a different population (students in Mainland China) and a different dependent measure (subjective well-being). In addition, instead of assessing actual and perceived performance on a lab test, I measured these variables with course examination in a classroom setting. Recent cross-cultural studies showed that although the extent of positive illusion of the self is smaller among Asians compared to European Americans (see Heine, Lehman, Markus, & Kitayama, 1999), the degree of association between positive illusion of the self and some psychological outcomes (e.g., subjective well-being, persistence, challenge seeking) is comparable across the two cultures (Chiu & Kim, in press; Gaertner, Sedikides, & Chang, 2008; Kim, Chiu, Peng, Cai, & Tov, 2010; Kim, Peng, & Chiu, 2008; Sedikides et al., 2003). This suggests that my results can be generalized to Asians. Therefore, consistent with my general hypothesis, I expected those who overestimate or underestimate their performance would experience lower levels of subjective well-being, compared to those who more accurately assess their low or high performance.

Method

The participants were 50 freshmen (37 females; mean age = 18.7 years) from two classes offered by the Law Department in a public university in Beijing, China. Each class had 25 students. In both classes, the final examination was the first and only examination; there were no quizzes or mid-term examinations. Furthermore, these students were in the same program and were taking the same required courses in their first year of study. One month before the final examination, participants were asked to estimate the rank they would achieve in the class.

Aside from estimating their final examination rank, the participants also filled out the Chinese version of the Satisfaction With Life Scale (SWLS; Pavot & Diener, 1993). The scale consists of five items (e.g., “I was satisfied with my current life”; “In most ways my present life is close to my ideal”). The participants indicated their response on a 7-point Likert scale, ranging from 1 (*not at all*) to 7 (*a lot*). The alpha coefficient of the scale was .78 in the current study. At the end of the semester, with the participants’ permission, I obtained from the students’ university their actual ranks in the final examination.

Results and Discussion

Female participants ranked higher ($M = 12.89$, $SD = 8.35$) than male participants ($M = 19.62$, $SD = 7.18$), $F(1,48) = 6.67$, $p = .01$, $\eta^2_p = .12$. However, men and women did not differ in perceived rank, $F(1,48) = .004$, *ns*. No difference was found between the mean actual rank ($M = 14.64$, $SD = 8.53$) and the mean estimated rank ($M = 13.74$, $SD = 8.23$). Thus, unlike the American participants in Study 4 but consistent with past results (Heine et al., 1999), the Chinese participants in the present study did not display a general tendency to overestimate their performance. However, the extent of over-estimation was larger among male participants ($M = 6.00$, $SD = 6.71$) than female participants ($M = -0.89$, $SD = 7.15$), $F(1,48) = 9.21$, $p < .01$, $\eta^2_p = .16$. The correlation between actual and estimated rank was .59, $p < .001$. The mean of the Satisfaction With Life Scale was 4.00 ($SD = 1.29$).

I regressed SWLS on (mean-centered) actual rank, (mean-centered) estimated rank, gender, and their interactions. Again, gender did not qualify my results and was not considered further. The predicted Actual Rank X Estimated Rank interaction was significant, $F(1, 46) = 8.99$, $p < .01$, $\eta^2_p = .16$, but the main effects were not. As shown in Figure 5, simple slope analysis results showed that when actual rank was high (one standard deviation above its mean),

estimated rank was positively related to SWLS, $B = 0.08$, $t(48) = 1.98$, $p = .05$. That is, among high rank performers, those who expected worse performance were less satisfied with their life. In contrast, when actual rank was low (one standard deviation below its mean), there was a marginal negative correlation between estimated rank and SWLS, $B = -0.054$, $t(48) = -1.85$, $p = .07$. That is, among low performers, there was a non-significant trend for those who expected better performance to be less satisfied with their life. These results replicated and extended Study 4 results, showing that both those who overestimated their class performance and those underestimated it had lower levels of life satisfaction, compared to those with accurate performance estimation.

CHAPTER 7

GENERAL DISCUSSION

The present research contributes to the research literature on the effects of self-enhancement and self-effacement in two important ways. First, the psychological benefits and costs of self-enhancement is a contested issue in social psychology. The various issues surrounding the measurement of self-enhancement identified in recent research (see Kwan et al., 2004, 2008) have obscured the psychological costs of self-enhancement. In the present research, by clarifying these measurement issues, I found consistent evidence that like self-effacement, self-enhancement can have psychological costs. Second, the present research also provides evidence for the causal effects of self-enhancement and self-effacement on self-handicapping, performance, and subjective well-being. In short, I have obtained convergent results regarding the negative effects of self-enhancement from both experimental and correlational studies using a variety of dependent measures and diverse subject populations. These results show that having distorted self-views, regardless of whether the distortions are self-derogatory or self-ingratiating, could be a psychological liability.

Psychological Costs of Inaccurate Self-Assessment

To elaborate, as shown in Studies 4 and 5 results, there are considerable individual differences in how accurately people perceive their performance. Moreover, when self-enhancement and self-effacement are measured through independent assessments of actual and self-reported performance, both types of misperceptions of performance are linked to lower academic performance (Study 4) and life satisfaction (Study 5). These results indicate that past inconsistent findings regarding the psychological benefits and costs of self-enhancement are in part due to the measurement issues I reviewed in the Introduction to Study 4. Once these

measurement issues are clarified, the evidence consistently shows that misperceptions of one's task performance may have performance and well-being costs.

Evidence from the three experiments (Studies 1 to 3) provided further evidence for the psychological costs of misperceptions of performance. The results showed that experimentally induced self-enhancement and self-effacement raised the likelihood of practicing self-handicapping (taking test under distraction in Study 1, and withholding preparatory effort in Study 2) and reduced task performance (Study 3). Studies 1 and 2 results further illustrate that inaccurate performance feedback, irrespective of whether the feedback is overly positive or negative, can increase the concern over the self-implications of task performance. Receiving feedback that is more favorable than expected (based on past experiences with taking tests in the same domain) can lead to an inflated self-view and the motivation to preserve it. Such motivation reduces the motivation to verify one's actual ability in subsequent tasks. Likewise, receiving feedback that is less favorable than expected creates self-doubt over one's actual ability and the motivation to protect one's self-esteem by avoiding diagnostic feedback from future tasks that may further indict one's low ability. The increased tendency to practice self-handicapping and the heightened concern over performance associated with self-enhancement and self-effacement also explain why compared to accurate self-assessors, self-enhancers and self-effacers tend to have lower task performance (Study 3), academic achievement (Study 4), and life satisfaction (Study 5). Because self-enhancers and self-effacers tend to practice self-handicapping (they withhold preparatory and prefer taking tasks under distraction), they tend to have poor task performance and academic achievement. Because self-enhancers and self-effacers experience heightened concern over performance, they experience greater anxiety and stress in academic situations and have relatively low levels of life satisfaction.

This interpretation is consistent with the past findings that although positive self-evaluations are associated with many positive psychological outcomes (Taylor & Brown, 1988), these perceptions may undermine achievement motivation, future achievement, and subjective well-being when they become overly discrepant with actual performance (Colvin, Block, & Funder, 1995; Greham, Lane, ManMillan, Bocian, & Ward, 2000; Robins & Beer, 2001).

Psychological Benefits of Accurate Self-Assessment

Compared to self-enhancers and self-effacers, individuals with accurate self-assessment are less likely to practice self-handicapping. Instead, accurate self-assessors can take advantage of the accurate feedback to facilitate self-regulated learning. For example, as shown in previous studies, when high performers have knowledge of their performance and feel that they will do well in the task domain, they are most motivated to invest their intellectual resource to yield higher performance in that task domain (Forstering & Morgenstern, 2002). Thus, compared to self-enhancers and self-effacers, accurate self-assessors tend to have higher academic achievement and subjective well-being.

In Study 2, the high performers expended more preparatory effort upon receiving accurate (vs. inaccurate) feedback than did the low performers. Two reasons might account for this result. First, the negative performance feedback might have deflated the low performers' self-efficacy, which in turn, could hurt their motivation to engage in the preparatory learning activities (Bandura, 1977). Given this possibility, when teachers provide negative performance feedback to low performers, caution must be taken to separate the performance feedback from the evaluation of the person, and direct performance feedback specifically toward helping the learners calibrate their self-appraisal without lowering their self-worth (Kamins & Dweck, 1999).

Second, the participants in this study were provided with norm-referenced performance feedback (feedback on their performance relative to their peers). Because norm-referenced feedback may evoke a performance goal, low performers receiving this feedback may develop a sense of learned helplessness (Elliot, & McGregor, 2001; Grant & Dweck, 2003). Interestingly, given the possibility that my negative feedback might lower the low performers' self-efficacy and activate a performance goal, the low performers receiving (accurate) negative feedback still exhibited a slightly stronger learning motivation than the low performers receiving positive feedback. This result further underscores the learning benefits of accurate self-assessment versus self-enhancement among low performers. Nonetheless, it would be important to examine the generality of my results when the participants received different kinds of performance feedback (e.g., criterion-referenced vs. norm-referenced feedback, ability-focused vs. effort-focused feedback) (Kamins & Dweck, 1999; Mueller & Dweck, 1998).

Limitations and Future Directions

In the present research, I assumed that the participants had fairly accurate knowledge of their actual performance. Therefore, the discrepancy between perceived performance and actual performance should reflect motivated distortions of one's own performance. My pilot test result is consistent with this assumption: When given explicit instructions to be accurate, the participants were able to report their actual performance in focal test fairly accurately ($r = .81$ between perceived and actual performance). However, in the absence of the explicit instructions, as was the case in Studies 4 and 5, the correlation between perceived and actual performance dropped to .56 in Study 4 and .59 in Study 5. Based on past research on self-enhancement and self-protection motivations, I speculate that self-enhancers overstate their actual performance to

maintain a favorable view of the self, whereas self-effacers understate their actual performance because of self-doubt over their performance.

In present research, I did not manipulate the specific motivations behind self-enhancement or self-effacement. My major research goal was to examine the downstream motivational and performance consequences of self-enhancement and self-effacement. In the context of this research goal, in Studies 1 to 3, I used bogus performance feedback to simulate the experiences of self-enhancement and self-effacement in the laboratory and observed their psychological consequences. I seek to show that independent of what motivates self-enhancement and self-effacement, once the participants were led to view their performance as more positively or negatively than their actual performance, they would display the predicted downstream consequences of self-enhancement and self-effacement. Thus, I did not manipulate the motivations to self-enhance or self-efface, although I believe I need future studies that manipulate the motivations behind these biases to shed light on the motivational basis of my phenomena. For instance, a recent study showed that self-enhancement in self-reported GPA predicted poorer subsequent academic performance (Gramzow et al., 2003) – a finding consistent with my general conclusion. However, these investigators also found that the motive behind self-enhancement moderated the relationship between self-enhancement and future performance. When self-enhancement is motivated by an approach goal, self-enhancement is positively related to subsequent academic performance. However, when self-enhancement is driven by an avoidance goal, self-enhancement is negatively related to subsequent performance. These results underscore the importance of probing the motivational dynamics of self-enhancement and self-effacement.

An alternative explanation for my phenomena is that people with higher meta-cognitive ability tend to be more accurate in assessing their actual performance and hence are more well-adjusted and have better performance. Furthermore, providing individuals with accurate feedback may increase their awareness of their performance, and hence improve future performance and reduce self-handicapping. However, the meta-cognition account does not explain why people tend to be more accurate in assessing their performance when they receive explicit instructions to be accurate than when they do not. Furthermore, it is well-documented in the literature that high performers tend to have higher meta-cognitive awareness of their performance (Kruger & Dunning, 1999). Studies 4 and 5 showed that high performers, who are expected to have high meta-cognitive skills, often under-report their performance, and when they do, they have relatively low GPAs and life satisfaction. In short, although meta-cognition plays a crucial role in explaining self-enhancement (Kruger & Dunning, 1999), it does not fully explain my results.

The focus of the present research is on self-enhancement of performance on a focal task, whereas many past studies on self-enhancement have examined the effects of self-enhancement of personality traits. Future research is needed to verify whether inflated and deflated self-assessment of personality would produce the same effects of self-enhancement and self-effacing perceptions of task performance.

Conclusion

In summary, under the influence of the self-esteem movement, teachers are often pressurized to provide unfounded positive feedback to the students (Seligman, Reivich, Jaycox, & Gillham, 1995). My results underscore the importance of providing accurate performance feedback to students. These results resonate with the ancient Greeks' emphasis on knowing

thyself – Acknowledging one's strengths and weaknesses, rather than having distorted views of one's performance, is linked to higher academic achievement, subsequent performance, and preparatory effort for future achievement task, and life satisfaction. Encouraging students, children, friends, colleagues, and learners to perceive their ability more positively (or negatively) than their actual ability or providing them with unfounded positive (or negative) performance feedback could lower their motivation and performance on later tasks and reduce their life satisfaction.

FIGURES

Figure 1. Noise level chosen as a function of test performance and performance feedback.

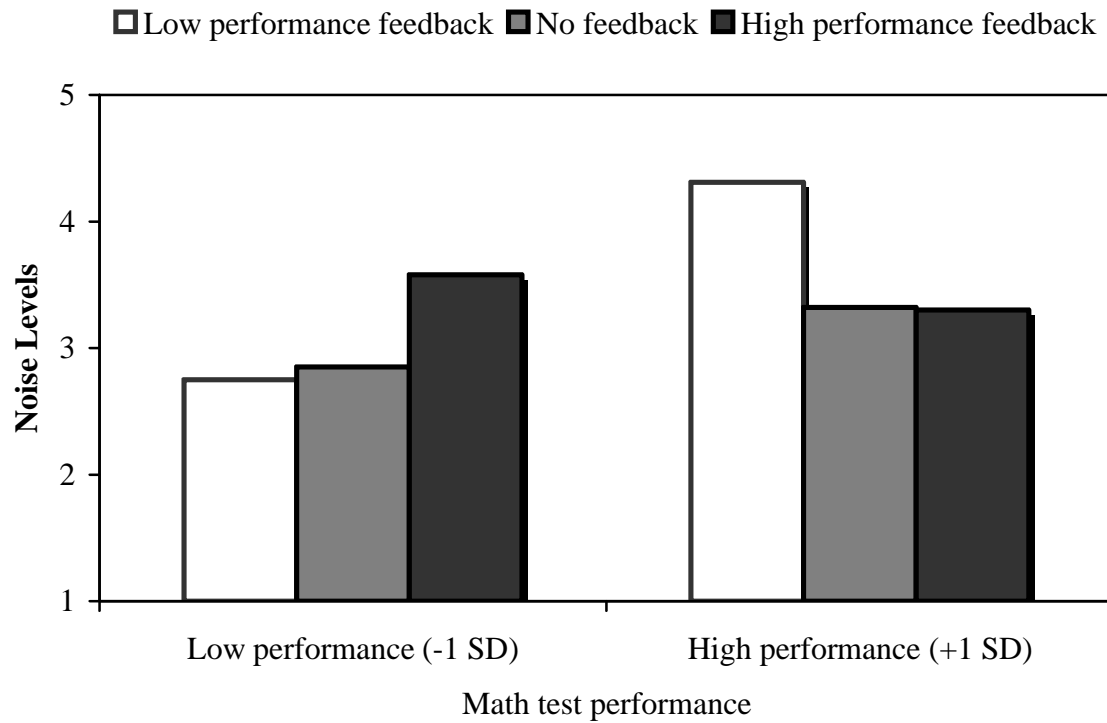


Figure 2. The number of anagrams attempted as a function of the math test performance and performance feedback.

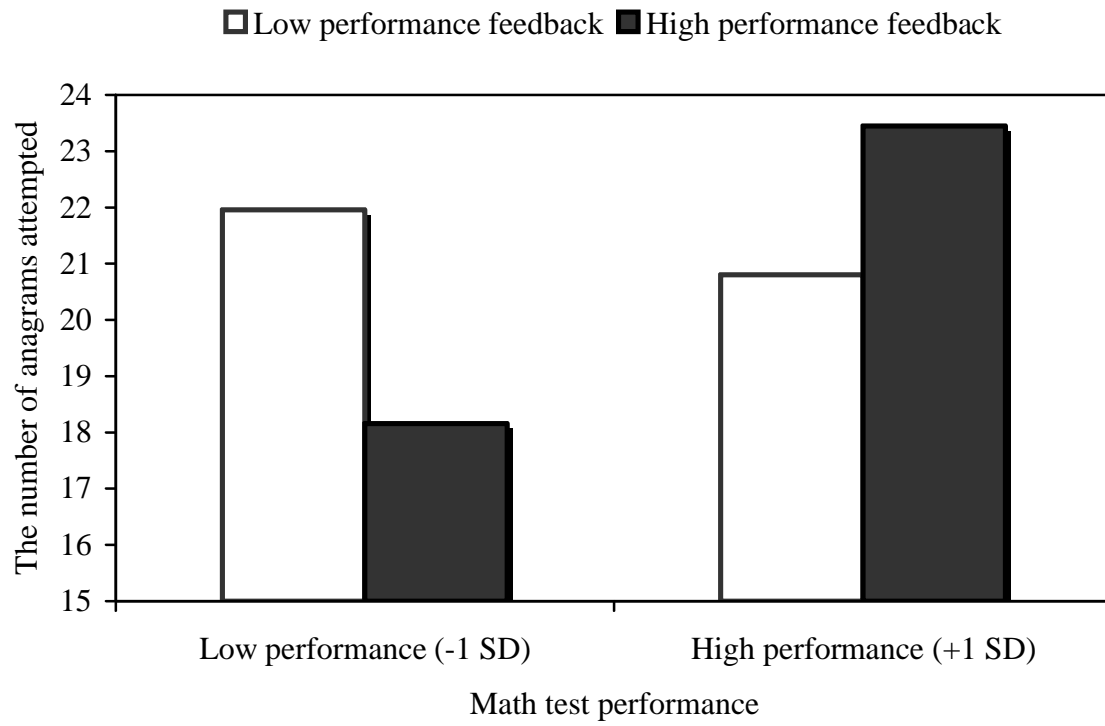


Figure 3. Anagram test performance as a function of the math test performance and performance feedback.

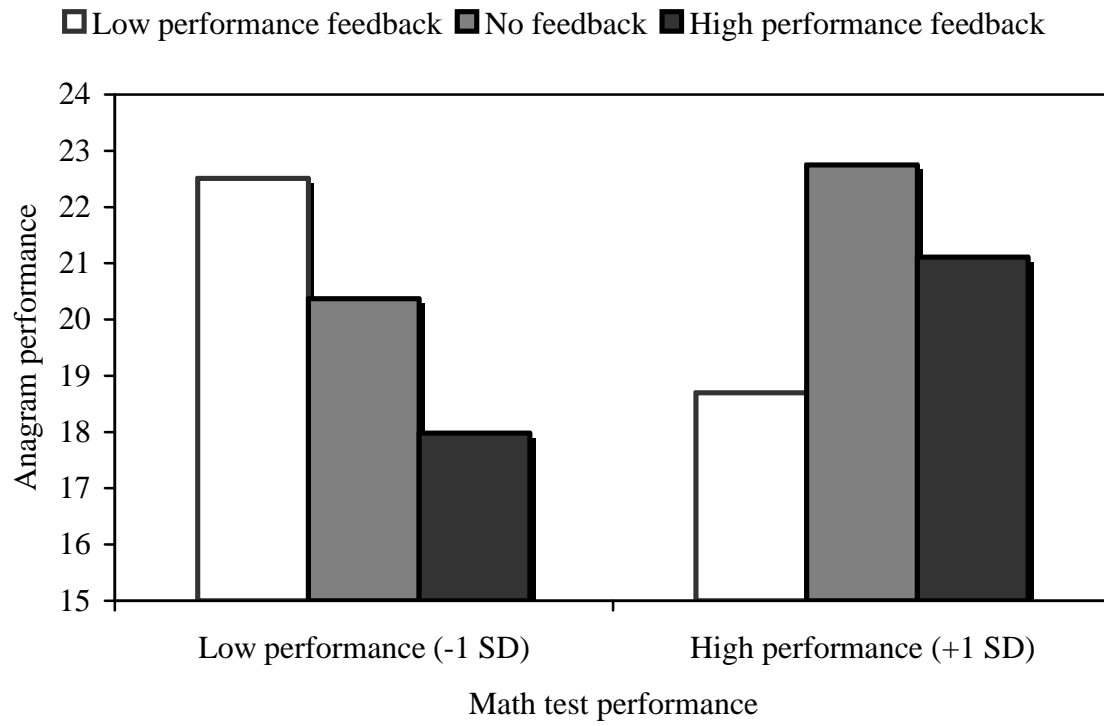


Figure 4. GPA as a function of actual and self-reported performance percentile.

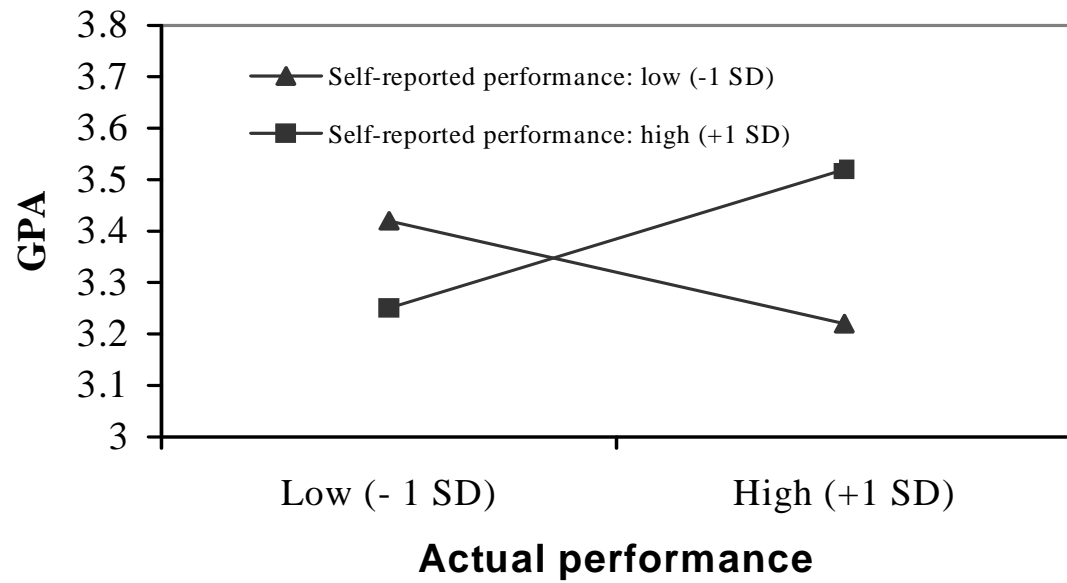
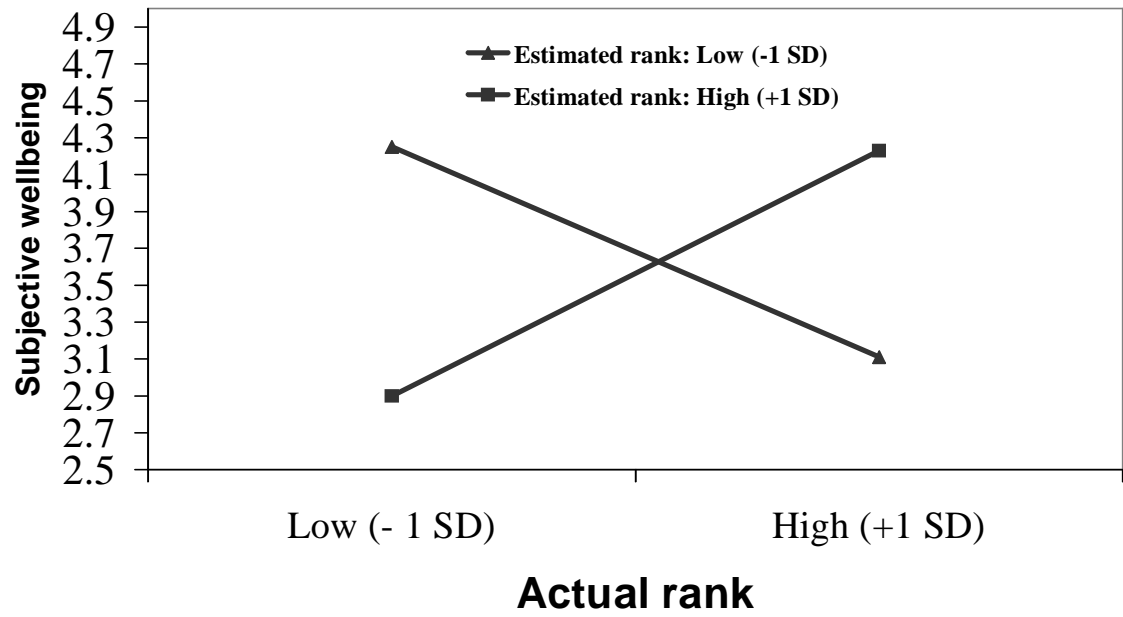


Figure 5. Subjective well-being as a function of actual and estimated class rank.



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